

EXHIBIT 7

Application Serial No. 11/391,941
Response to Office Action

Customer No. 01933

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE CLAIMS

Independent claim 1 has been amended to recite that the gradation signal generation circuit supplies the gradation current to the display pixel through a data line connected to the display pixel, the threshold voltage detection circuit detects the threshold voltage peculiar to the drive element of the display pixel through the data line, and that the compensation voltage application circuit applies the compensation voltage to the drive element through the data line.

Independent claim 1 has also been amended to recite that the gradation signal generation circuit generates a gradation current having a current value for allowing the optical element to perform a light emitting operation at a luminance corresponding to a luminance gradation of the display data, as a gradation signal, based on subject matter recited in (now canceled) claim 6.

In addition, dependent claims 3, 4, and 7-9 have been amended to better accord with amended independent claim 1.

Still further, independent claim 10 has been amended to recite that the gradation signal generation circuit supplies a

Application Serial No. 11/391,941
Response to Office Action

Customer No. 01933

gradation current, as a gradation signal, to each said display pixel via a corresponding one of the data lines, wherein the gradation signal generation circuit generates each said gradation current to have a current value for allowing the optical element of the display pixel to perform a light emitting operation at a luminance corresponding to a luminance gradation of the display data, based on subject matter recited in (now canceled) claim 17.

In addition, dependent claims 16 and 18 have been amended to depend from and better accord with amended independent claim 10, instead of from claim 15, which has been canceled.

Yet still further, independent claim 30 has been amended to recite that the threshold voltage peculiar to the drive element is detected through a data line connected to the display pixel, the compensation voltage is applied to the drive element through the data line, and that the gradation current is supplied as the gradation signal to the display pixel through the data line.

In addition, independent claim 30 has also been amended to recite supplying, after the drive element holds the voltage, a gradation current having a current value for allowing the optical element to perform a light emitting operation at a luminance corresponding to a luminance gradation of display data, as a gradation signal, based on subject matter previously recited in claim 33. And dependent claim 33 has been amended to better accord with amended independent claim 30.

Application Serial No. 11/391,941
Response to Office Action

Customer No. 01933

Yet still further, independent claim 34 has been amended to recite that the threshold voltage peculiar to the drive element of each display pixel is detected through the data lines, the compensation voltage is applied to the drive element of each display pixel through the data lines, and that the gradation current is supplied as the gradation signal to each display pixel through the data lines.

In addition, independent claim 34 has also been amended to recite supplying, as a gradation signal to each said display pixel through the data lines, after the drive element of the display pixel holds the voltage, a gradation current having a current value for allowing the optical element of the display pixel to perform a light emitting operation at a luminance corresponding to a luminance gradation of the display data, based on subject matter previously recited in claim 42.

Dependent claim 35, moreover, has been amended based on amended claim 34, and dependent claim 42 has been amended to better accord with amended claim 35.

No new matter has been added, and it is respectfully requested that the amendments be approved and entered.

THE PROVISIONAL DOUBLE PATENTING REJECTION

Claims 1-42 were provisionally rejected based on obviousness-type double patenting in view of claims 1-57 of

Application Serial No. 11/391,941
Response to Office Action

Customer No. 01933

Application No. 11/888,474. This rejection is respectfully traversed with respect the claims of the present application as amended above and the claims of Application No. 11/888,474 as amended on July 26, 2010.

Only claim 1 of the present application was specifically addressed by the Examiner. According to amended independent claim 1, a gradation signal generation circuit generates a gradation current having a current value for allowing the optical element to perform a light emitting operation at a luminance corresponding to a luminance gradation of the display data, as a gradation signal corresponding to the luminance gradation of the display data, and supplies the gradation current to the display pixel through a data line connected to the display pixel.

In addition, according to amended independent claim 1, a compensation voltage application circuit generates a compensation voltage for compensating for the threshold voltage of the drive element based on the threshold voltage and applies the compensation voltage to the drive element through the data line before the gradation signal generation circuit supplies the gradation current to the display pixel.

That is, as recited in amended independent claim 1, the drive element is supplied with the gradation current after a voltage corresponding to the threshold voltage has been previously applied.

Application Serial No. 11/391,941
Response to Office Action

Customer No. 01933

By contrast, as recited in independent claim 1 of Application No. 11/888,474 (as amended on July 26, 2010), a gradation voltage compensation circuit generates a compensated gradation voltage by adding a gradation voltage to a compensation voltage, and applies the compensated gradation voltage to the display pixel, wherein the gradation voltage corresponds to a luminance gradation of the display pixel designated by display data, and wherein the compensation voltage is generated by multiplying a specific value detected by a specific value detection circuit with a unit voltage. Thus, in claim 1 of Application No. 11/888,474, the compensation voltage and the gradation voltage are added to be supplied at the same time as a compensated gradation voltage.

It is respectfully submitted, therefore, that claim 1 of Application No. 11/888,474 does not render obvious amended independent claim 1 of the present application, in which the gradation current is supplied as a gradation signal after application of a compensated voltage.

Accordingly, it is respectfully submitted that amended independent claim 1 of the present application is not obvious in view of claim 1 of Application No. 11/888,474.

Claims 2-42 of the present application were also provisionally rejected based on obviousness-type double patenting but were not specifically addressed. It is respectfully

Application Serial No. 11/391,941
Response to Office Action

Customer No. 01933

submitted that these claims also patentably distinguish over the claims of Application No. 11/888,474.

It is respectfully submitted, moreover, that a mere assertion that the claims of the present application and the claims of a reference application are "claiming similar subject matters" (see pages 2 and 4 of the Office Action) is not sufficient to support an obviousness-type double patenting rejection. "Any obviousness-type double patenting rejection should make clear: (A) The differences between the inventions defined by the conflicting claims - a claim in the patent compared to a claim in the application; and (B) The reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim at issue is anticipated by, or would have been an obvious variation of, the invention defined in a claim in the patent." (MPEP 804.)

In view of the foregoing, it is respectfully requested that the provisional obviousness-type double patenting rejection be withdrawn.

THE PRIOR ART REJECTION

Claims 1-42 were rejected under 35 USC 102 as being anticipated by US 2004/0239596 ("Ono et al"). This rejection, however, is respectfully traversed with respect to the claims as amended hereinabove.

Application Serial No. 11/391,941
Response to Office Action

Customer No. 01933

According to the present invention as recited in amended independent claim 1, a display drive apparatus is provided which operates, in accordance with display data, a current control type optical element of each display pixel of a display, wherein each display pixel is provided with the optical element and a drive element which supplies a driving current to the optical element.

According to claim 1, the display drive apparatus comprises a gradation signal generation circuit which generates a gradation current having a current value for allowing the optical element to perform a light emitting operation at a luminance corresponding to a luminance gradation of the display data, as a gradation signal corresponding to the luminance gradation of the display data, and supplies the gradation current to the display pixel through a data line connected to the display pixel.

In addition, according to claim 1, the display drive apparatus comprises a threshold voltage detection circuit which detects a threshold voltage peculiar to the drive element of the display pixel through the data line.

Still further, according to claim 1, the display drive apparatus comprises a compensation voltage application circuit which generates a compensation voltage for compensating for the threshold voltage of the drive element based on the threshold voltage and applies the compensation voltage to the drive element

Application Serial No. 11/391,941
Response to Office Action

Customer No. 01933

through the data line before the gradation signal generation circuit supplies the gradation current to the display pixel.

It is respectfully submitted that, by contrast, Ono et al discloses a structure for deriving a threshold voltage V_{th} of a thin film transistor 15 based on a detection of a potential of a grounding line 6. In addition, Ono et al discloses applying a voltage obtained by addition of a data voltage V_D and the threshold voltage V_{th} to a data line 7.

It is respectfully submitted that Ono et al does not disclose generating and supplying a gradation current as a gradation signal, in the manner of the gradation signal generation circuit of claim 1.

In addition, it is respectfully submitted that Ono et al does not disclose applying a compensation voltage before supplying a gradation current, in the manner of the compensation voltage application circuit of claim 1.

Still further, it is respectfully submitted that Ono et al discloses deriving the threshold voltage V_{th} based on the detection of a potential of the grounding line 6. Accordingly, it is respectfully submitted that Ono et al does not disclose or suggest a threshold voltage detection circuit which detects a threshold voltage peculiar to the drive element of the display pixel through the data line, as recited in claim 1.

Application Serial No. 11/391,941
Response to Office Action

Customer No. 01933

Accordingly, it is respectfully submitted that amended independent claim 1 clearly patentably distinguishes over Ono et al. And for similar reasons, it is respectfully submitted that amended independent claims 10, 30, and 34 also patentably distinguish over Ono et al.

In view of the foregoing, it is respectfully submitted that amended independent claims 1, 10, 30, and 34, and all the claims respectively depending therefrom, all patentably distinguish over Ono et al under 35 USC 102 as well as under 35 USC 103.

* * * * *

Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned for prompt action.

Respectfully submitted,

/Douglas Holtz/

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